520.43072X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: K. MOGI, et al

Serial No.:   10/647,261

Filed: August 26, 2003

For: DATA PREFETCHING METHOD

REQUEST FOR RECONSIDERATION OF PETITION TO MAKE SPECIAL UNDER 37 CFR 1.102(d) and MPEP. §708.02, VIII

MS Petition
Commissioner for Patents   January 6, 2005
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. Petition

Applicants hereby renews its Petition to make this application **Special** previously submitted on September 14, 2004, in accordance with 37 CFR §1.102(d) and MPEP 708.02, VIII. The September 14, 2004 Petition was denied by a Decision issued on December 6, 2004 in which the Petitions Examiner stated that the September 14, 2004 Petition failed to recite distinct features of the claimed subject matter. The present Request for Reconsideration of Petition incorporates by reference the September 14, 2004 Petition and provides additional details regarding the claims and how the claimed subject matter is patentable over the references. The present invention is a new application filed in the United States Patent and Trademark Office on August 28, 2003 and as such has not received any examination by the Examiner.

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2. Claims

Applicants hereby represent that all the claims in the present application are directed to a single invention. If upon examination it is determined that all the claims presented are not directed to a single invention, Applicants will make an election without traverse as a prerequisite to the granting of special status.

3. Search

Applicants hereby submit that a pre-examination search, a copy of the search been made by a professional searcher was attached to the September 14, 2004 Petition and therefore is not being resubmitted herewith.

The field of search covered Class 707, subclasses 3, 4, 5, 6 and 10 and Class 711, subclasses 100, 111, 112, 113 and 114. Additionally, a computer database search was conducted on the USPTO systems EAST and WEST.

The above subclasses represent areas deemed to contain subject matter of interest to one or more of the search features. Please note that relevant references may be classified outside of these areas. The integrity of the search is based on the records as presented to us by the United States Patent and Trademark Office (USPTO). No further integrity studies were performed.

4. Copy of References

A listing of all references found by the professional searcher is provided by a Form PTO-1449 and copies of the references and the Form PTO-1449 were submitted as part of an Information Disclosure Statement (IDS) filed on September 14, 2004. A copy of said September 14, 2004 Information Disclosure Statement without the references is being attached herewith.

5. Detailed Discussion of the References and Distinctions Between the References and the Claims

Below is a discussion of the references uncovered by the search and cited in the IDS filed on even date that appear to be most closely related to the subject matter encompassed by the claims of the present application, and which discussion particularly points out how Applicants' claimed subject matter is distinguishable over those references. All other references uncovered by the search and cited in the IDS filed on even date are **not** treated in detail herein.

a.   Detailed Discussion of the References

Mogi et al (U.S. Patent Application No. 2003/0093647) shows as per Figs. 1, 13 and 14 a storage system 10 which upon receipt of query plan information 880 from a query plan acquisitory program 120 determines prefetchable areas and sets required information in the DBMS execution information 38, allocates the amount of prefetch cache 28 needed and executes a data prefetch operation. See paragraphs 19-24, 78 and 122-167 Summary, sections, 21, 78 and Figs. 1, 13 and 14.

Bonner et al (U.S. Patent No. 6,606,617) shows as per Figs. 1 and 2 an

optimized technique for prefetching LOB table space pages with RDBMS software, the SOL statements, and the instructions derived therefrom, may be loaded from the data storage devices 104 and 106 into a memory of the computer system 102 for use during the prefetching operations. See col. 2, lines 5-64, col. 4, lines 64-col. 5, line 35, col. 4, lines 31-45 and Figs. 1 and 2.

Snodgrass et al (U.S. Patent Application Publication No. 2004/0117359) shows as illustrated in fig. 1-4 a database application for processing temporal user queries having a user application layer, a middleware layer and a DBMS layer an adaptable query optimization and evaluation in temporal middleware in a mapping of temporal SOL statements to conventional SOL parts, performs query optimization and some processing. See Abstract and paragraphs 7-23 and 24-39 and Figs. 1-4.

Idei et al (U.S. Patent Application Publication No. 2004/0117398) shows in Figs. 1 and 8-14 a prefetch appliance server in which a DB is built in a virtualization environment, instructs to read into caches of storage devices data to be accessed in the near future based on the prediction results. See Abstract and paragraphs 15-48 and 668-128.

b. Distinctions Between the References and the Claims

The present invention as recited in the claims is not taught or suggested by any of the above noted references whether taken individually or in combination with each other or in combination with any of the other references now of record.

The present invention as recited in the claims 1-12 is directed to a data prefetching method for use in a computer system, a storage device including cache memory wherein the storage device is connected to the first computer and stores

data of a database managed by the database management system and a second computer connected to the first computer which uses data of the database. According to the present invention, a processing content which satisfies given conditions is sampled from a content of processing which is executed by the database management system, a data prefetching method is determined based upon the sampled content, prefetching of data based on the data prefetching method is instructed to the storage device when the content of the processing is executed, and completion of the data prefetching to the storage device is instructed when the execution of the content of the processing is completed.

Further, the present invention as now recited in claim 13 is directed to a data prefetching program which is executed by a computer system including a computer which operates database management system and storage device which stores data of a database which the database management system manages. The computer system also includes a cache. As per the present invention, the program causes the computer system to acquire information on a content of processing which is to be executed by the database management system, acquire information on mapping of data respectively from the database management system, the computer and the storage device, acquire information indicative of starting of processing and determine a prefetching method using the acquired information. Further, according to the present invention, the database prefetching method is given to the storage device and information indicative of completion of the processing is acquired and the data prefetching method is instructed to be released to the storage device.

Still further, the present invention as now recited in claims 15 and 16 is directed to a program for managing fetching of data and a management method

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which is executed in a computer system including a storage device which has a plurality of logical disk devices which store data and a cache which stores a copy of the data stored in the logical disk devices and a database management system which executes management of reading and writing of data from the storage device. According to the present invention as recited in claims 15 and 16, information on a prefetching job is acquired including information on a program of an object which issues a prefetch instruction an information on a DBMS, a repetition group is grasped based on information on analyzed SQL statements which a job program designated by the acquired prefetching job information issues and a structure of access data and an access method is set based on an execution plan of the SQL statements acquired from the DBMS, a cache amount of the DBMS and a cache prefetching method are determined based on information analyzed by SQL analysis and information on an input data amount and a cache amount as acquired repetition information and prefetching is instructed by issuing a prefetching method determined according to a prefetching method determination to the storage device which constitutes and access destination.

The above described features of the present invention as recited in the claims are not taught by any of the above described references or any of the other references of record whether taken individually or in combination with each other.

For example, the above described features of the present invention are not taught or suggested by Mogi. As per the above, Mogi teaches a storage system which upon receipt of query plan information from a query plan acquisition program determines prefetchable areas and sets required information in the DBMS execution information, allocates the amount of prefetch cache needed, and executes a data

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prefetch operation.

The present invention as recited in claims 1-12 differs from that taught by Mogi being that the present invention as recited in claims 1-12 samples a processing content which satisfies given conditions form a content of processing which is executed by the database management system, determines a prefetching method based on the sampled content and instructs prefetching of data based on the determined prefetching method to the storage device when the content of the processing is executed. These features are clearly not taught or suggested by Mogi.

The present invention as recited in claims 13 and 14 differs from that taught by Mogi being that the present invention as recited in claims 13 and 14 acquires information on a content of processing which is executed by the database management, acquires information on mapping data respectively from the database management, the computer and the storage device, acquires information indicative of starting of processing and determines a prefetching method using the acquired information. These features are clearly not taught or suggested by Mogi.

The present invention as recited in claims 15-20 differs from that taught by Mogi being that the present invention as recited in claims 15-20 acquires information on a prefetching job including information on a program of an object which issues a prefetching instruction and information on a DBMS constitution on the DBMS, a grasps a repetition group based on information on SQL statements which a job program designated by the acquired prefetching job information issues and sets a structure of access data and an access method based on an execution plan on the SQL statements acquired from the DBMS, determines a prefetching amount by determining a cache amount of the DBMS and a cache prefetching method based

on SQL analyzed information on an input data amount and a cache amount as acquired repetition information and instructing prefetching by issuing a prefetching method determined by the prefetching method determination to the storage device which constitutes an access destination. These features are clearly not taught or suggested by Mogi.

The above noted deficiencies of Mogi are also evident in each of the above described references and each of the other references of record. Therefore, the above described references and the other references of record whether taken individually or in combination with each other still fail to teach or suggest the features of the present invention as recited in the claims.

Based on the above, applicants submit that the claims of the present application are patentable over the above described references and the other references of record whether taken individually or in combination with each other.

6.   Fee (37 C.F.R. 1.17(i))

The fee required by 37 C.F.R. § 1.17(i) is to be paid by:

[ ]   the Credit Card Payment Form (attached) for $130.00.

[ ]   charging Account _____ the sum of $130.00.

A duplicate of this petition is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER & MALUR, P.C., Deposit Account No. 01-2135 (520.43072X00).

Respectfully submitted,

MATTINGLY, STANGER & MALUR, P.C.

_____
Carl I. Brundidge
Registration No. 29,621

CIB/jdc
Enclosures

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Applicants: K. MOGI, et al

Serial No.:   10/647,261

Filed: August 26, 2003

For: DATA PREFETCHING METHOD

COPY

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.97 & 1.98

MS Amendment
Commissioner for Patents   September 14, 2004
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In the matter of the above-identified application, applicants are submitting

herewith copies of the documents listed in the attached form equivalent to Form

PTO-1449 for the Examiner's consideration.

This information disclosure statement is being submitted before the

mailing date of a first office action on the merits.

Each of the documents listed on the attached form equivalent to Form

PTO-1449 is in the English language.

It is respectfully requested that this information disclosure statement be

considered by the Examiner.

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Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus Deposit Account No. 01-2135 (520.43072X00) please credit any excess fees to such deposit account.

Respectfully submitted,

_____
Carl I. Brundidge
CIB/jdc   Registration No. 29,621
(703) 312-6600   ANTONELLI, TERRY, STOUT & KRAUS, LLP

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FORM PTO-1449 U.S. Department of Commerce (Rev. 4/92) Patent and Trademark Office	ATTY. DOCKET NO. 520.43072X00	SERIAL NO. 10/647,261
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)	APPLICANT K. MOGI, et al	
	FILING DATE **August 26, 2003**	GROUP

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER								DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		5	7	9	9	3	0	9	8/98	Srinivasan			
		5	8	9	7	6	3	4	4/99	Attaluri et al			
		6	0	6	5	0	1	3	5/00	Fuh et al			
		6	5	3	9	3	8	2	3/03	Byrne et al			
		6	6	0	6	6	1	7	8/03	Bonner et al			
		6	7	2	8	7	2	6	4/04	Bernstein et al			
	2002	0	0	3	8	3	1	3	3/02	Klein et al			
	2002	0	1	9	4	1	5	5	12/02	Aldridge et al			
	2003	0	0	9	3	4	4	2	5/03	Mogi et al			
	2003	0	0	9	3	6	4	7	5/03	Mogi et al			
	2003	0	1	9	5	9	4	0	10/03	Basu et al			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation is considered, draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

(Form PTO-1449 [6-4])

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FORM PTO-1449 U.S. Department of Commerce (Rev. 4/92) Patent and Trademark Office	ATTY. DOCKET NO. 520.43072X00	SERIAL NO. 10/647,261
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)	APPLICANT **K. MOGI, et al**	
	FILING DATE **August 26, 2003**	GROUP

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER							DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	2 0 0 4	0	1	1	7	3	5	9	6/04	Snodgrass et al			
	2 0 0 4	0	1	1	7	3	9	8	6/04	Idei et al			
	2 0 0 4	0	2	0	0	2	8	2	10/03	Arnold et al			
	2 0 0 3	0	2	2	0	9	4	1	11/03	Arnold et al			

(COPY watermark)

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER							DATE	COUNTRY	CLASS	SUBCLASS	ABSTRACT YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER	DATE CONSIDERED

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(Form PTO-1449 [6-4])

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